AMENDMENTS TO THE SPECIFICATION

Paragraph [0002] of the electronically filed specification is amended to read as follows:

Lithography is a well known technique for applying patterns to the surface of a workpiece, such as a circuit pattern to a semiconductor chip or wafer. This technique has the additional advantage of being able to faithfully reproduce small and intricate patterns. Traditional optical photolithography involves applying electromagnetic radiation to a mask having openings formed therein (i.e., a transmission mask) such that the light or radiation that passes through the openings is applied to a region on the surface of the workpiece that is coated with a radiation-sensitive substance (e.g., a photoresist). The other type of potential next generation lithography (NGL) mask is an extreme ultraviolet lithography (EUVL) mask. The EUVL mask works by reflecting and absorbing the incident radiation. For both types of masks, the mask pattern is reproduced on the surface of the workpiece by removing the exposed or unexposed photoresist.

Paragraph [0003] of the electronically filed specification is amended to read as follows:

The capabilities of conventional lithographic techniques have been severely challenged by the need for circuitry of increasing density and higher resolution features. The demand for smaller feature sizes has driven the wavelength of radiation needed to produce the desired pattern to ever shorter wavelengths. Moreover, the International Technology Roadmap for Semiconductors (ITRS) ~~for both optical and next generation~~ lithography ~~(NGL) masks~~ projects (for both optical and next generation lithography (NGL) masks) a steady decrease in both the mean critical dimension (CD) and mean-to-target allowance on the mask. Currently on 90 nanometer (nm) masks, the CD mean-to-target is 7.2 nm for alternating masks and 9 nm for attenuating masks, while for the 45 nm node it decreases to 3.5 nm. Although write systems and etch technologies are expected to improve for the 45 nm node and beyond in order to make attaining this target

more feasible, it is nonetheless a very difficult target to meet. Currently, feedforward and feedback control systems are being used in wafer processing to correct for CD variations. However, in mask production, mask quantities are much smaller and thus the feedback approach is not feasible. Typically, if a mask does not meet the CD mean-to-target, the mask is scrapped and a new mask is put into production. Not only is this expensive due to the cost of the raw materials and processing time, but turn around time is also significantly impacted.

Paragraph [0027] of the electronically filed specification is amended to read as follows:

The deposited thin film material 114 from an electroplating bath may be nickel, for example. Due to the properties of the chemical reaction, the Ni will not deposit onto a TaN buffer layer or a SiO_2 hardmask. In addition to nickel, other commercially available ECD baths include, but are not limited to: platinum (Pt), ruthenium (Ru), palladium (Pd), cobalt (Co), and cobalt tungsten (CoW). However, each of these baths would be used in conjunction with an absorber film different than Ni. Regardless of the plating material used, it will be appreciated that the process is controlled in a manner so as not to overgrow the amount of sidewall film material 114.

Finally, as shown in Figure 5, the hardmask layer 110 is removed and the absorber layer 108 (with the newly added sidewall film material 114) is used to pattern the corrected features that are subsequently etched into the buffer layer 106. Thus, for example, the etched opening 116 in between adjacent portions of the buffer layer 106 is narrower than would be the case had the etching been carried out using the dimensions of the original pattern etched into the absorber layer 108 (Figure 3).